CLAIMS

1. A method of preventing a mine vehicle from colliding, the mine vehicle (1) comprising at least: a movable carrier (2) that may be driven in a first movement direction (A) and in a second movement direction (B), at least one scanner (13, 14), and a control system including at least a first control unit (4) arranged on the carrier (2); the method comprising:

determining for the mine vehicle (1) at least one safe area (15a, 15b, 15c) provided within an area between minimum distances (16) and maximum distances (17) determined with respect to the vehicle (1);

scanning the environment in front of the vehicle (1) when driving the vehicle (1) in one movement direction (A, B);

carrying out a first collision examination wherein the safe area (15a) in front of the vehicle (1) is monitored, and issuing a collision warning message if an obstacle is detected within the safe area (15a), **characterized** by

determining also at least one sideward (C) safe area (15b) for the vehicle (1),

determining an obstacle-free route (24) on the basis of scanning results, and determining points in a sideward (C) direction of the vehicle (1) to restrict the route (24);

forming memory points (21) on the basis of coordinates of the points restricting the route (24), and storing the memory points (21) in the control system; and

carrying out a second collision examination wherein at least one sideward safe area (15b) of the vehicle is monitored, and issuing a collision warning message if even one of the memory points (21) resides within the safe area (15b) being monitored.

2. A method as claimed in claim 1, **characterized** by

simulating in advance, on the basis of position and control data, the path of movement of at least one part of the vehicle (1) in the control system,

carrying out the second collision examination by taking into account the path of movement obtained by simulation, and

adjusting, on the basis of the second collision examination, steering movements of the vehicle (1) in order to avoid overstepping the sideward safe area (15b).

3. A method as claimed in claim 1 or 2, **characterized** by storing substantially continuously the memory points (21) in a ring buffer provided in the control system, and updating for the second collision examination the memory points (21) in a ring memory with respect to the movement of the vehicle (1).

4. A method as claimed in any one of the preceding claims, **characterized** by controlling the vehicle (1) unmannedly, and utilizing for such control a data transmission connection (6) provided between the first control unit (4) residing on the carrier (2) of the vehicle (1) and a second, external control unit (7).

5. A method as claimed in any one of the preceding claims, **characterized** by updating dimensions of at least one safe area (15a to 15c) on the basis of the location of the mine vehicle (1).

6. A mine vehicle comprising at least: a movable carrier (2) that may be driven in a first movement direction (A) and in a second movement direction (B), at least one scanner (13, 14), and a control system including at least a first control unit (4) arranged on the carrier (2); and wherein

at least one scanner is configured to scan the environment in front of the vehicle (1) in order to detect obstacles (10, 18);

at least one safe area (15a to 15c) defined by minimum distances (16) and maximum distances (17) determined with respect to the vehicle (1) is determined in the control system; and which

control system is configured to monitor scanning results and to issue a collision warning message if an obstacle is detected within the safe area (15a) in front of the vehicle (1), **characterized** in that

in the control system, at least one safe area (15b) in a sideward (C) direction of the vehicle (1) is further determined,

the control system allows several memory points (21) including their position information to be stored therein, and

the control system is configured to monitor at least one sideward (C) safe area (15b) of the vehicle (1) and to issue a collision warning message if even one of the memory points (21) resides within the safe area (15b) being monitored.

7. A mine vehicle as claimed in claim 6, **characterized** in that the mine vehicle (1) comprises a first laser scanner (13) directed in a first movement direction (A) and a second laser scanner (14) directed in a second

movement direction (B), and that each movement direction (A, B) is provided with a safe area (15a, 15b) of its own.

8. A mine vehicle as claimed in claim 6 or 7, **characterized** in that the minimum distances (16) of the safe area (15a, 15b, 15c) are determined according to the external shape and structure of the mine vehicle (1).

9. A mine vehicle as claimed in any one of claims 6 to 8, **characterized** in that the mine vehicle (1) is unmanned, and that the first control unit (4) is through a data transmission connection (6) connected to a second, external control unit (7) in order to transfer control data between the control units (4, 7).

10. A mine vehicle as claimed in any one of claims 6 to 9, **characterized** in that the control system is configured to update at least one safe area (15a to 15c) on the basis of the location of the mine vehicle (1).